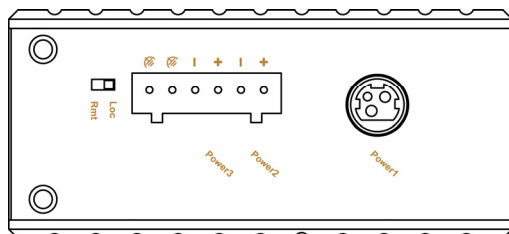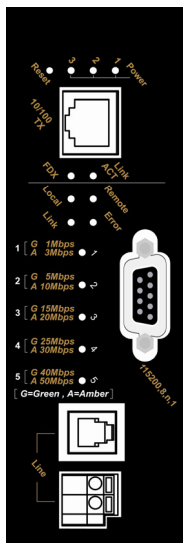# Quick Start Guide

This quick start guide describes how to install and use the Hardened Managed Ethernet Extender. This is the Hardened Managed Ethernet Extender of choice for harsh environments constrained by space.

Physical Description

The Port Status LEDs and Power Inputs

Power Input Assignment			
Power1		12VDC	DC Jack
Power2	+	12-32VDC	Terminal Block
	−	Power Ground	
Power3	+	12-32VDC	
	−	Power Ground	
⏚		Earth Ground	
DIP Switch Assignment			
Loc	The device operates in local mode		
Rmt	The device operates in remote mode		

LEDs	State	Indication
Power1 Power2 Power3	Steady	Power on
	Off	Power off
Ethernet		
Link/ACT	Steady	Valid network connection established
	Flashing	Transmitting or receiving data ACT stands for ACTIVITY
	Off	Neither valid network connection established nor transmitting/receiving data
FDX	Steady	Connection in full-duplex mode FDX stands for FULL-DUPLEX
	Off	Connection in half-duplex mode

Ethernet Extender	
Remote	The device operates in remote mode
Local	The device operates in local mode
Error	Error occurred
Link	A valid connection established
1	Green, 1Mbps, up to 1900M Amber, 3Mbps, up to 1800M
2	Green, 5Mbps, up to 1600M Amber, 10Mbps, up to 1400M
3	Green, 15Mbps, up to 1200M Amber, 20Mbps, up to 1000M
4	Green, 25Mbps, up to 800M Amber, 30Mbps, up to 700M
5	Green, 40Mbps, up to 600M Amber, 50Mbps, up to 300M

DC Terminal Block Power Inputs: There are two pairs of power inputs can be used to power up this media converter. Redundant power supplies function is supported. You only need to have one power input connected to run the media converter.
DC JACK Power input: 12VDC.

Functional Description

- Meets NEMA TS1/TS2 Environmental requirements: temperature, shock, and vibration for traffic control equipment.
- Meets EN61000-6-2 & EN61000-6-3 EMC Generic Standard Immunity for industrial environment.
- Operates transparent to higher layer protocols such as TCP/IP.
- Ethernet port: Supports IEEE802.3/802.3u/802.3x. Auto-negotiation: 10/100Mbps, full/half-duplex; Auto MDI/MDIX.
- Ethernet Extender port: Symmetrical on the VDSL, full-duplex 50Mbps communications link over existing copper telephone line.
- One DIP switch for configuring Local (Loc) and Remote (Rmt).
- Ten speeds with speed indicator LEDs on front panel of unit, up to 50Mbps @ about 300meters (984ft.), down to 1Mbps @ about 1,900meters (6,233ft.).
- Supports RS-232 console, SNMP, Web Browser management.
- Operating voltage and Max. current consumption: 0.35A @ 12VDC, 0.175A @ 24VDC. Power consumption: 4.2W Max.
- Power Supply: Redundant 12-32VDC Terminal Block power inputs and 12VDC DC JACK with 100-240VAC external power supply. "For use with Model UP0351E-12P as power jack supply source by Universal Micro Electronics Co., Ltd.".
- Field Wiring Terminal: Use Copper Conductors Only, 14-24 AWG torque value 4.5 lb-in.
- Operating temperature range @ -40℃ to 75℃ (-40℉ to 167℉).

  Tested for functional operation @ -40℃ to 85℃ (-40℉ to 185℉).

  UL508 Industrial Control Equipment certified Operating Surrounding Air Temperature @ -34℃ to 60℃ (-29℉ to 140℉).
- Supports Din-Rail or Panel Mounting installation.

Assembly, Startup, and Dismantling

- Assembly: Place the Hardened Managed Ethernet Extender on the DIN rail from above using the slot. Push the front of the Hardened Managed Ethernet Extender toward the mounting surface until it audibly snaps into place.
- Startup: Connect the supply voltage to start up the Hardened Managed Ethernet Extender via the terminal block (or DC JACK).
- Dismantling: Pull out the lower edge and then remove the Hardened Managed Ethernet Extender from the DIN rail.
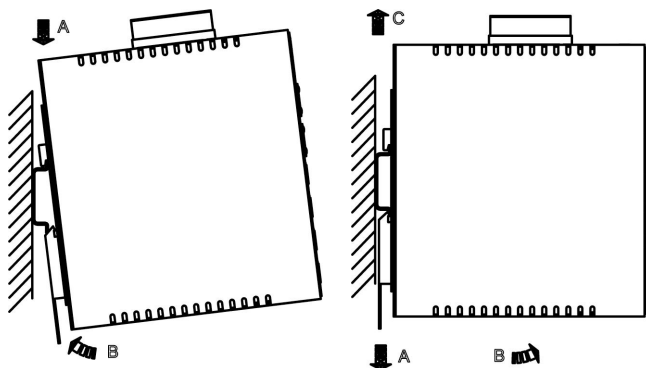
Console Configuration

- Connect to the console of Hardened Managed Ethernet Extender:
  Connect the DB9 null-modem or cross over cable to the RS-232 serial port of the device and the RS-232 serial port of the terminal or computer running the terminal emulation application. Direct access to the administration console is achieved by directly connecting a terminal or a PC equipped with a terminal-emulation program (such as HyperTerminal) to the console port of Hardened Managed Ethernet Extender.

- Configuration settings of the terminal-emulation program:

Baud rate	Data bits	Parity	Stop bit	Flow control
115,200bps	8	none	1	none

- Press the "Enter" key. The Command Line Interface (CLI) screen should appear as below:

- And the "#" prompt will show on the screen.
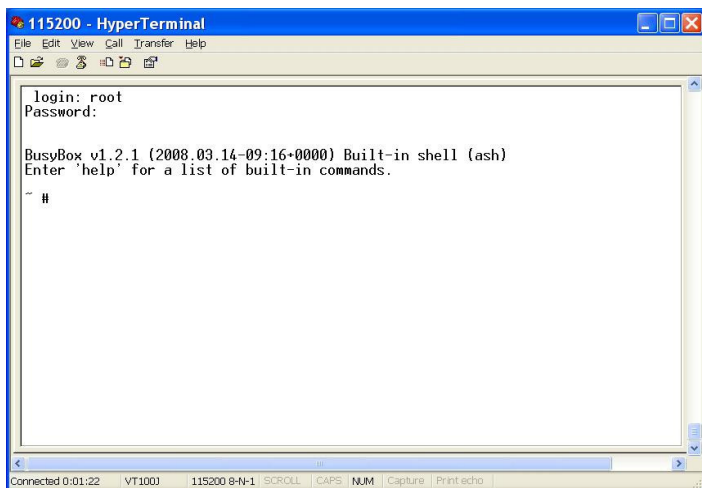
**<Note>** The procedures to restore factory default password:

Connect to console of Hardened Managed Ethernet Extender through Microsoft Windows HyperTerminal. Please power on Hardened Managed Ethernet Extender and press "Ctrl" and "D" while Hardened Managed Ethernet Extender is booting up to enter Bootloader. Input "reset password" command at Bootloader prompt and press "Enter". Power off and on Hardened Managed Ethernet Extender then Hardened Managed Ethernet Extender is restored with factory default password.

Web Configuration

- Login the Hardened Managed Ethernet Extender:

  Specify the default IP address (192.168.1.10) of the Hardened Managed Ethernet Extender in the web browser. A login window will be shown as below:
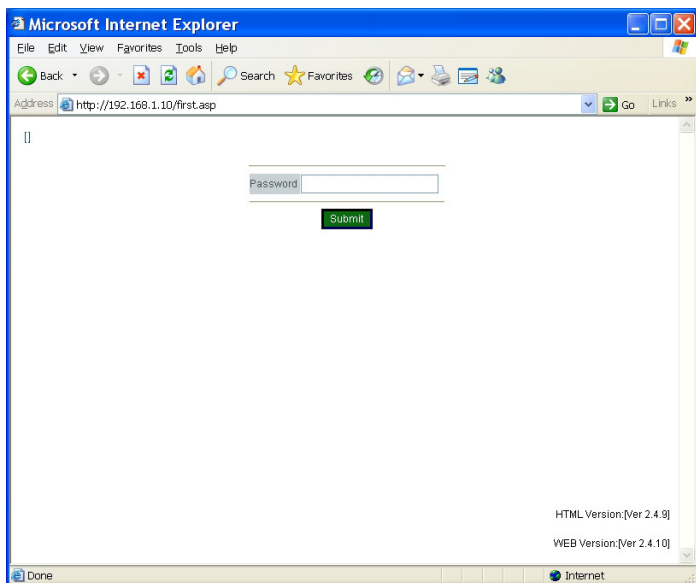
- Enter the factory default password (no password).
  Then click on the "Submit" button to log on to the Hardened Managed Ethernet Extender.
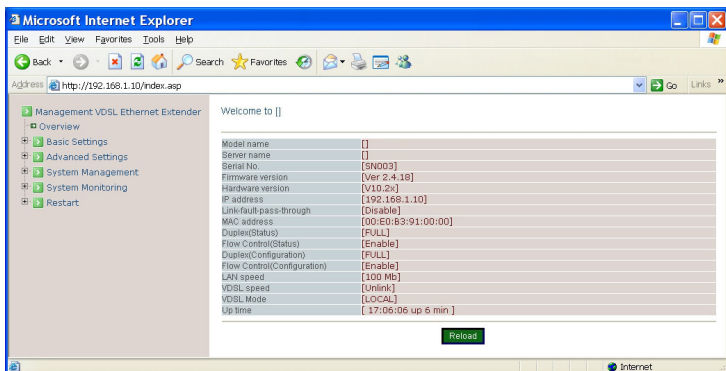
Preface

This manual describes how to install and use the Hardened Managed Ethernet Extender. The Hardened Managed Ethernet Extender introduced here provides one channel for Ethernet over existing voice grade copper wire.

The Hardened Managed Ethernet Extender fully complies with IEEE802.3 10Base-T and IEEE802.3u 100Base-TX/FX standards.

In this manual, you will find:

* Product overview
* Features on the Hardened Managed Ethernet Extender
* Illustrative LED functions
* Installation instructions
* Management Configuration
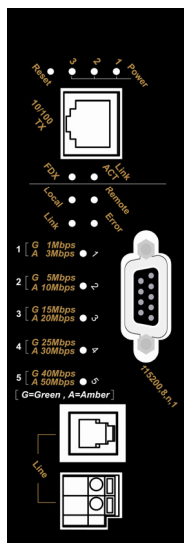* Specifications

Table of Contents

Introduction

The Hardened Managed Ethernet Extender provides one channel for Ethernet over existing voice grade copper wire. This Hardened Managed Ethernet Extender solution is perfectly fitted in the industrial applications or rugged environment.

Product Overview

Product Features

- Meets NEMA TS1/TS2 Environmental requirements such as temperature, shock, and vibration for traffic control equipment.
- Meets EN61000-6-2 & EN61000-6-3 EMC Generic Standard Immunity for industrial environment.
- Operates transparent to higher layer protocols such as TCP/IP.
- Ethernet Port: Supports IEEE802.3/802.3u/802.3x. Auto-negotiation: 10/100Mbps, full/half-duplex; Auto MDI/MDIX.
- Ethernet Extender port: Symmetrical on the VDSL, high-speed full-duplex 50Mbps communications link over existing copper telephone line.
- One DIP switch for configuring Local (Loc) and Remote (Rmt).
- Ten speeds with speed indicator LEDs on front panel of unit, up to 50Mbps @ about 300meters (984ft.), down to 1Mbps @ about 1,900meters (6,233ft.).
- Supports RS-232 console, SNMP, Web Browser management.
- Operating voltage and Max. current consumption: 0.35A @ 12VDC, 0.175A @ 24VDC. Power consumption: 4.2W Max.
- Power Supply: Redundant 12-32VDC Terminal Block power inputs and 12VDC DC JACK with 100-240VAC external power supply. "For use with Model

　　UP0351E-12P as power jack supply source by Universal Micro Electronics Co., Ltd.".
- Field Wiring Terminal: Use Copper Conductors Only, 14-24 AWG torque value 4.5 lb-in.
- Operating temperature range @ -40℃ to 75℃ (-40℉ to 167℉).
  Tested for functional operation @ -40℃ to 85℃ (-40℉ to 185℉).
  UL508 Industrial Control Equipment certified Operating Surrounding Air Temperature @ -34℃ to 60℃ (-29℉ to 140℉).
- Supports Din-Rail or Panel Mounting installation.

Packing List

When you unpack this product package, you will find the items listed below. Please inspect the contents, and report any apparent damage or missing items immediately to our authorized reseller.

- The Hardened Managed Ethernet Extender
- User's Manual
- AC to DC Power Adaptor and Power Cable (optional)

One-Channel Hardened Managed Ethernet Extender

Ports

The Hardened Managed Ethernet Extender provides one TX port and one Ethernet Extender port.

For the TX port, it uses RJ-45 connector and auto senses the speed of 10/100Mbps.

For the Ethernet Extender port, it uses RJ-11 and Terminal Block connectors and auto senses the speed of 1/3/5/10/15/20/25/30/40/50Mbps.

Ethernet Extender Mode Settings

Ethernet Extender mode settings are made very simple by means of a DIP (Dual Inline Package) switch on the top panel of the Hardened Managed Ethernet Extender.

DIP switch

There is one pin on the DIP switch for Ethernet Extender mode settings. Refer to the table below for more details.

Loc	Rmt
The device operates in local mode	The device operates in remote mode

Front Panel & LEDs

LED Indicators

The LED indicators give you instant feedback on status of the Hardened Managed Ethernet Extender:

| LEDs	State	Indication
Power1 Power2 Power3	Steady	Power on
	Off	Power off
Ethernet		
Link/ACT	Steady	A valid Ethernet connection established
	Flashing	Transmitting or receiving Ethernet data ACT stands for ACTIVITY
	Off	Neither valid Ethernet connection established nor transmitting/receiving Ethernet data
FDX	Steady	Ethernet Connection in full-duplex mode FDX stands for FULL-DUPLEX
	Off	Ethernet Connection in half-duplex mode
Ethernet Extender		
1	Green	The Ethernet Extender port transmitting/receiving at 1Mbps, up to 1900M
	Amber	The Ethernet Extender port transmitting/receiving at 3Mbps, up to 1800M
2	Green	The Ethernet Extender port transmitting/receiving at 5Mbps, up to 1600M
	Amber	The Ethernet Extender port transmitting/receiving at 10Mbps, up to 1400M
3	Green	The Ethernet Extender port transmitting/receiving at 15Mbps, up to 1200M
	Amber	The Ethernet Extender port transmitting/receiving at 20Mbps, up to 1000M
4	Green	The Ethernet Extender port transmitting/receiving at 25Mbps, up to 800M
	Amber	The Ethernet Extender port transmitting/receiving at 30Mbps, up to 700M
5	Green	The Ethernet Extender port transmitting/receiving at 40Mbps, up to 600M
	Amber	The Ethernet Extender port transmitting/receiving at 50Mbps, up to 300M
Remote	Steady	The device operates in remote mode
Local	Steady	The device operates in local mode
Error	Steady	Error occurred
Link	Steady	A valid connection established

Installation

This chapter gives step-by-step installation instructions for the Hardened Managed Ethernet Extender.

Selecting a Site for the Equipment

As with any electric device, you should place the equipment where it will not be subjected to extreme temperatures, humidity, or electromagnetic interference. Specifically, the site you select should meet the following requirements:

- The Surrounding Air temperature should be between -34 to 60 degrees Celsius.
- The relative humidity should be less than 95 percent, non-condensing.
- Surrounding electrical devices should not exceed the electromagnetic field (RFC) standards.
- Make sure that the equipment receives adequate ventilation. Do not block the ventilation holes of the equipment.
- The power outlet should be within 1.8 meters of the product.

Wiring Diagram
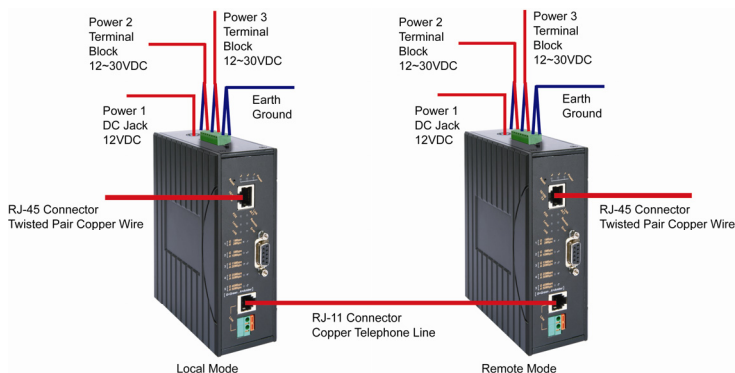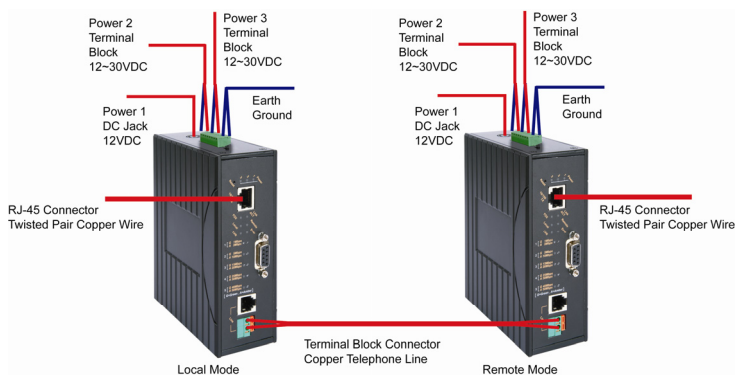
DIN Rail Mounting

Fix the DIN rail attachment plate to the back panel of the Hardened Managed Ethernet Extender.

Installation: Place the Hardened Managed Ethernet Extender on the DIN rail from above using the slot. Push the front of the Hardened Managed Ethernet Extender toward the mounting surface until it audibly snaps into place.

Removal: Pull out the lower edge and then remove the Hardened Managed Ethernet Extender from the DIN rail.
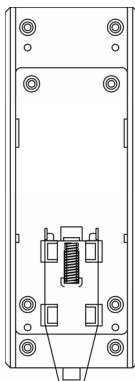
Connecting to Power

Redundant DC Terminal Block Power Inputs or 12VDC DC Jack:

12VDC DC Jack

Step 1: Connect the supplied AC to DC power adapter to the receptacle on the topside of the Hardened Managed Ethernet Extender.
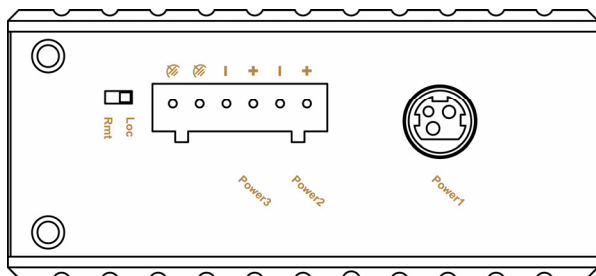
Step 2: Connect the power cord to the AC to DC power adapter and attach the plug into a standard AC outlet with the appropriate AC voltage.

Redundant DC Terminal Block Power Inputs

There are two pairs of power inputs can be used to power up this device. You only need to have one power input connected to run the Hardened Managed Ethernet Extender.

Step 1: Connect the DC power cord to the plug-able terminal block on the Hardened Managed Ethernet Extender, and then plug it into a standard DC outlet.

Step 2: Disconnect the power cord if you want to shut down the Hardened Managed Ethernet Extender.

Power Input Assignment			
Power1		12VDC	DC Jack
Power2	+	12-32VDC	Terminal Block
	−	Power Ground	
Power3	+	12-32VDC	
	−	Power Ground	
⏚		Earth Ground	
DIP Switch Assignment			
Loc	The device operates in local mode		
Rmt	The device operates in remote mode		

Web-Based Browser Management

The Hardened Managed Ethernet Extender provides a web-based browser interface for configuring and managing the Hardened Managed Ethernet Extender. This interface allows you to access the Hardened Managed Ethernet Extender using a preferred web browser.

This chapter describes how to configure the Hardened Managed Ethernet Extender using its web-based browser interface.

Logging on to The Hardened Managed Ethernet Extender
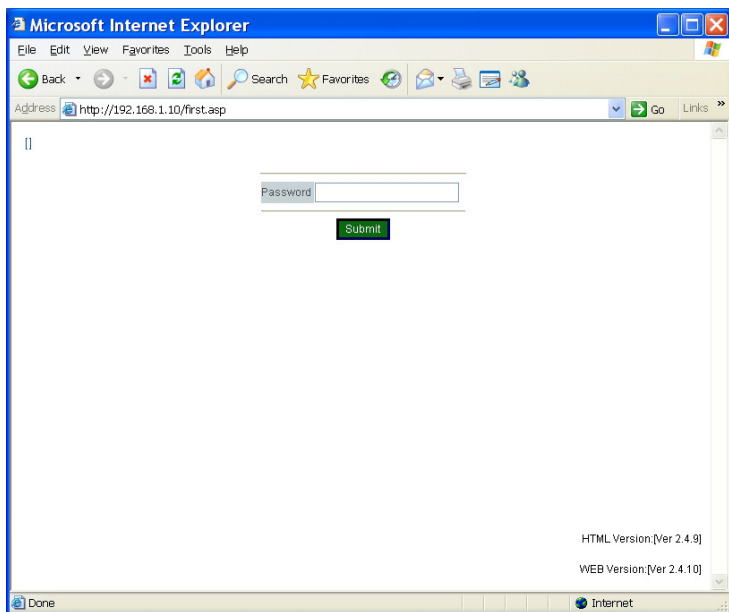
IP Address

In your web browser, specify the IP address of the Hardened Managed Ethernet Extender. Default IP address is 192.168.1.10.
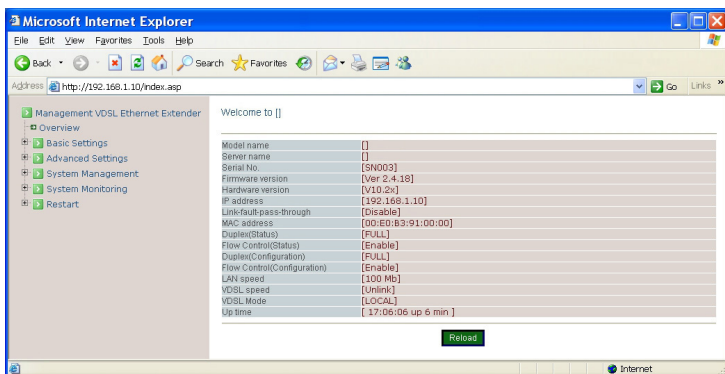
Password

Enter the factory default password (no password).
Or enter a user-defined password if you followed the instructions later and changed the factory default password.

Then click on the "Submit" button to log on to the Hardened Managed Ethernet Extender.

Understanding the Browser Interface

The web browser interface provides groups of point-and-click buttons at the left field of the screen for configuring and managing the Hardened Managed Ethernet Extender.

Basic Settings
Network Settings, Server Name Settings, Time Server Settings

Advanced Settings
Lan Settings, VDSL Settings, SNMP Settings, Link-Fault-Pass-Through Settings, Log Settings

System Management
Change Password, Accessible List, Restore Factory Default, Firmware Update, Reset VDSL, Retrain VDSL

System Monitoring
System Log, VDSL Status

Restart
Restart System

Basic Settings

Network Settings

1. IP configuration: Click "IP configuration" drop-down menu to choose "Static" or "DHCP" from the "IP configuration" drop-down list for the Hardened Managed Ethernet Extender to use a static IP or dynamic IP address (the IP address will be automatically assigned by DHCP server over the network).
2. IP address: Click in "IP Address" text box and type a new address to change the IP Address.
3. Netmask: Click in "Netmask" text box and type a new address to change the Netmask.
4. Gateway 1, 2, 3, 4: Click the text box and type a new address to change the Gateway.
5. DNS server 1, 2, 3, 4: Click the text box and type a new address to change the DNS server.
6. Reload: Click "Reload" button to reload previous settings.
7. Submit: Click "Submit" button to apply new settings.

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Server Name Settings

1. Server name: Click in "Server Name" text box. Type a server name if it is blank, or replace the current server name with a new one.
2. Reload: Click "Reload" button to reload previous settings.
3. Submit: Click "Submit" button to apply new settings.
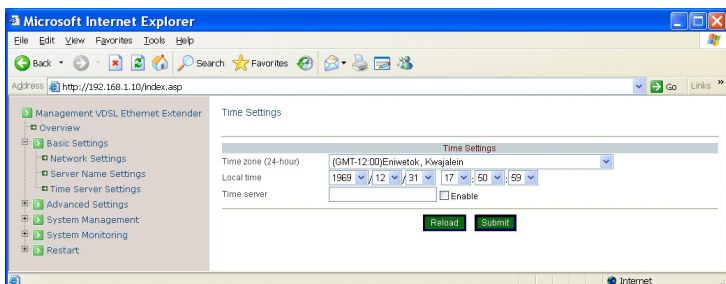
Time Server Settings

1. Time zone (24-hour): Click "Time zone" drop-down menu to select a different time zone from the "Time zone" drop-down list.
2. Local time: Click drop-down menu to select a different local time from the drop-down list.
3. Time server: Click in "Time server" text box to enter Time server address for the Hardened Managed Ethernet Extender. And check "Enable" to enable this setting.
4. Reload: Click "Reload" button to reload previous settings.
5. Submit: Click "Submit" button to apply new settings.

Advanced Settings
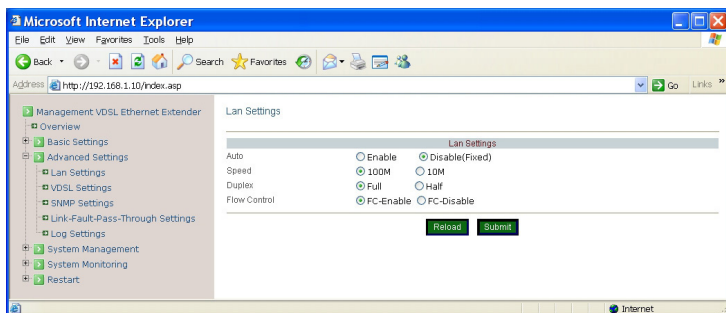
Lan Settings

1. Auto: Check "Enable" or "Disable" to enable or disable auto negotiation for Ethernet port of the Hardened Managed Ethernet Extender.
2. Speed: Check "100M" or "10M" to set the speed of Ethernet port to 100Mbps or 10Mbps.
3. Duplex: Check "Full" or "Half" to set the duplex mode of Ethernet port to Full Duplex or Half Duplex.
4. Flow Control: Check "FC-Enable" or "FC-Disable" to enable or disable flow control for Ethernet port of the Hardened Managed Ethernet Extender.
5. Reload: Click "Reload" button to reload previous settings.
6. Submit: Click "Submit" button to apply new settings.

VDSL Settings

1. Max. Speed: Click "Max. Speed" drop-down menu to select a maximum speed for Ethernet Extender port from the "Max. Speed" drop-down list.

2. Fixed Rate: Click "Fixed Rate" drop-down menu to disable or select a fixed speed rate for Ethernet Extender port from the "Fixed Rate" drop-down list.
3. Polling Interval: Click in "Polling Interval" text box to enter polling interval for Ethernet Extender port.
4. Reload: Click "Reload" button to reload previous settings.
5. Submit: Click "Submit" button to apply new settings.

SNMP Settings

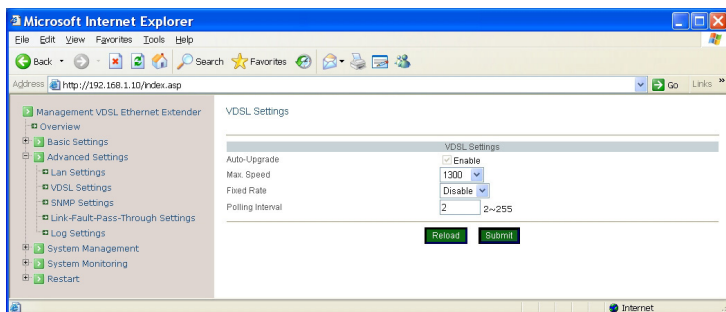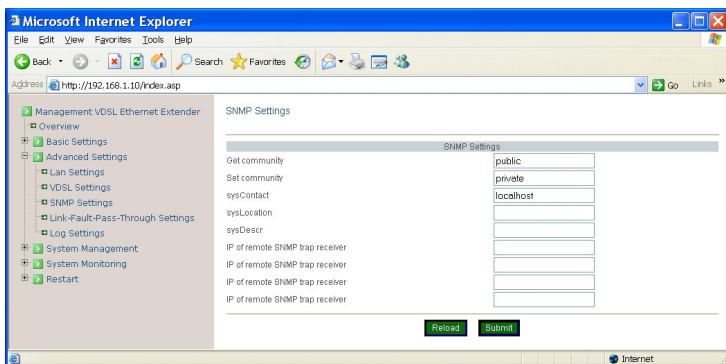1. Get community: Click in the "Get community" textbox and specify a get community name.
2. Set community: Click in the "Set Community" textbox and specify a set community name.
3. sysContact: Click in the "sysContact" textbox and specify a new contact for SNMP.
4. sysLocation: Click in the "sysLocation" textbox and specify a new location for SNMP.
5. sysDescr: Click in the "sysDescr" textbox and specify a new description for SNMP.
6. IP of remote SNMP trap receiver: For each "IP of remote SNMP trap receiver", Click in the "IP of remote SNMP trap receiver" textbox and specify an IP address of remote SNMP trap receiver.
7. Reload: Click "Reload" button to reload previous settings.
8. Submit: Click "Submit" button to apply new settings.

Link-Fault-Pass-Through Settings

1. Link-Fault-Pass-Through: Check "Enable" or "Disable" to enable or disable link-fault-pass-through for the Hardened Managed Ethernet Extender.
2. Reload: Click "Reload" button to reload previous settings.
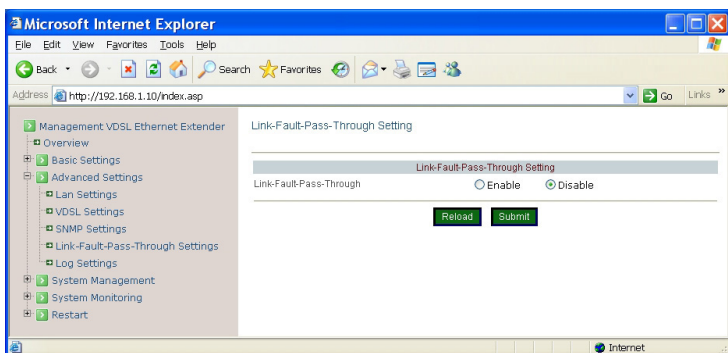3. Submit: Click "Submit" button to apply new settings.

Log Settings

1. Log: Check or uncheck "Enable" to enable or disable Data Log Setting for the Hardened Managed Ethernet Extender.
2. Reload: Click "Reload" button to reload previous settings.
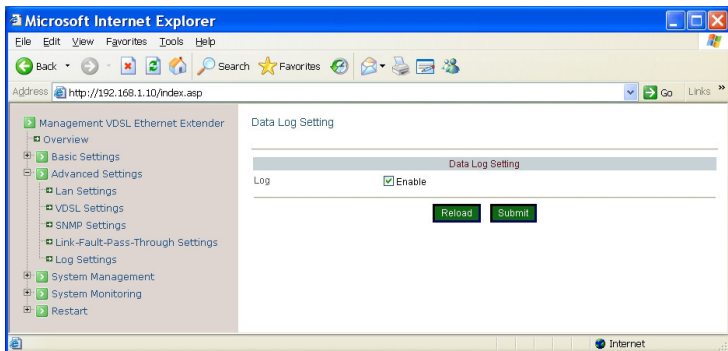3. Submit: Click "Submit" button to apply new settings.

System Management
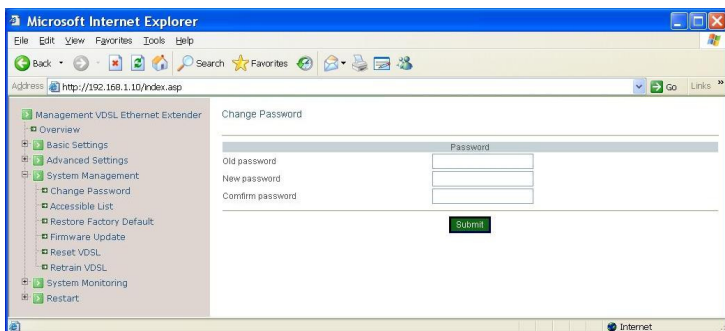
Change Password

1. Old password: Click in "Old password" text box and type in the old password.
2. New password: Click in "New password" text box and type in the new password.
3. Confirm password: Click in "Confirm password" text box. Type the same password in "New password" text box again to verify it.
4. Submit: Click "Submit" button to apply new settings.
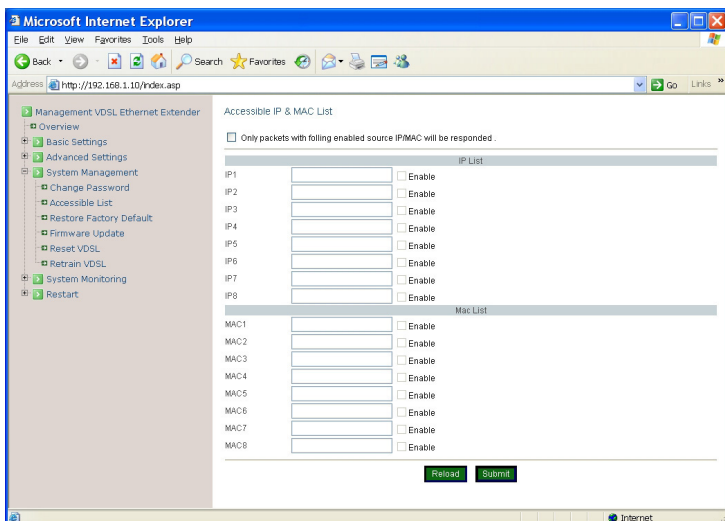
Accessible List

1. Only packets with following enabled source IP/MAC will be responded: Check this option to enable the following accessible source IP/MAC list. Uncheck this option will allow all source IP/MAC's connection request.
2. IP1 ~ 8: Click in "IP1 ~ 8" text box and specify IP addresses that can access to the Ethernet port on the Hardened Managed Ethernet Extender. Check this option to enable the IP addresses.
3. MAC1 ~ 8: Click in "MAC1 ~ 8" text box and specify MAC addresses that can access to the Ethernet port on the Hardened Managed Ethernet Extender. Check this option to enable the MAC addresses.
4. Reload: Click "Reload" button to reload previous settings.
5. Submit: Click "Submit" button to apply new settings.
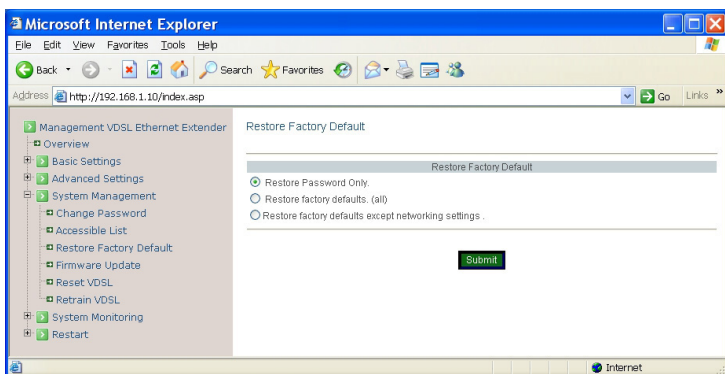
Restore Factory Default

1. Restore Password Only: Check this option to restore the factory default password.
2. Restore factory defaults (all): Check this option to restore the Hardened Managed Ethernet Extender to the factory default values.
3. Restore factory defaults except networking settings: Check this option to restore the Hardened Managed Ethernet Extender to the factory default values but keep networking settings of the Hardened Managed Ethernet Extender.
4. Submit: Click "Submit" button to apply new settings.
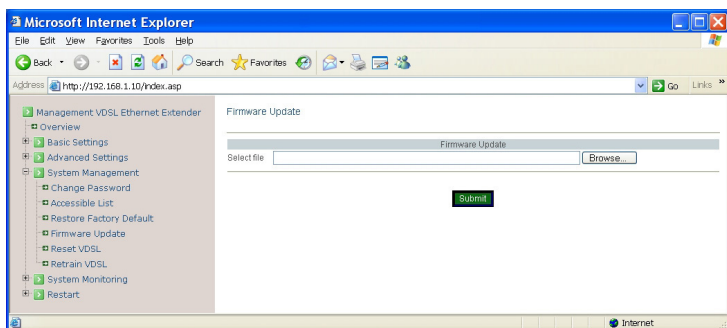
Firmware Update

1. Select file: Click in "Select file" text box and type the access directory and name of the file that you intend to upgrade it to the Hardened Managed Ethernet Extender.
2. Browse: Click the "Brower" button to select the firmware to be updated to the Hardened Managed Ethernet Extender.
3. Submit: Click "Submit" button to apply new settings.
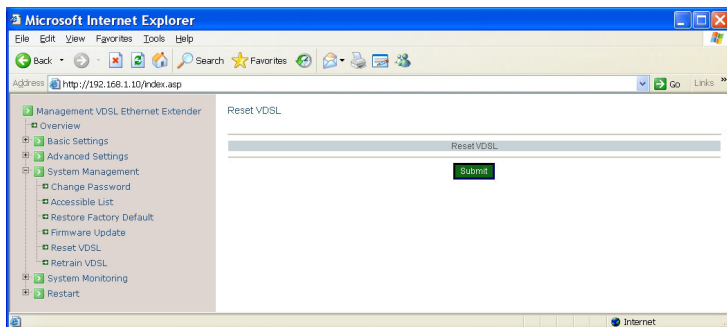
Reset VDSL

1. Submit: Click "Submit" button to reset the settings and counters of the Ethernet Extender port.
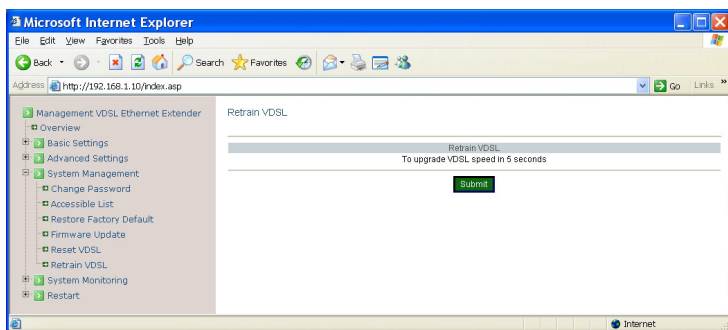
Retrain VDSL

1. Submit: Click "Submit" button to re-negotiate the speed of the Ethernet Extender port.

System Monitoring
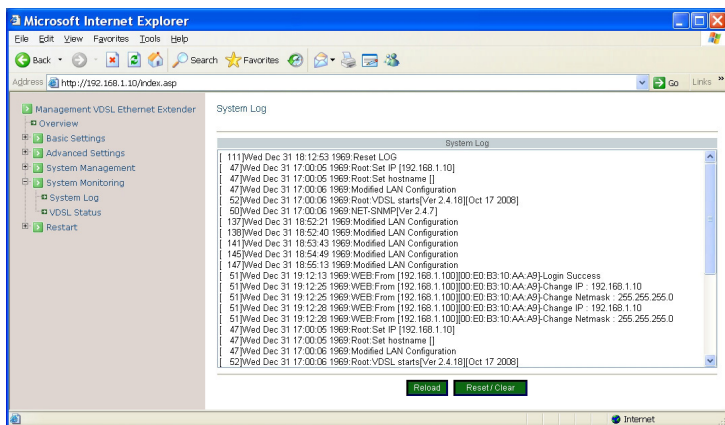
System Log

1. Reload: Click the "Reload" button to reload the system log of the Hardened Managed Ethernet Extender.
2. Reset / Clear: Click "Reset / Clear" button to reset and clean the system log of the Hardened Managed Ethernet Extender.
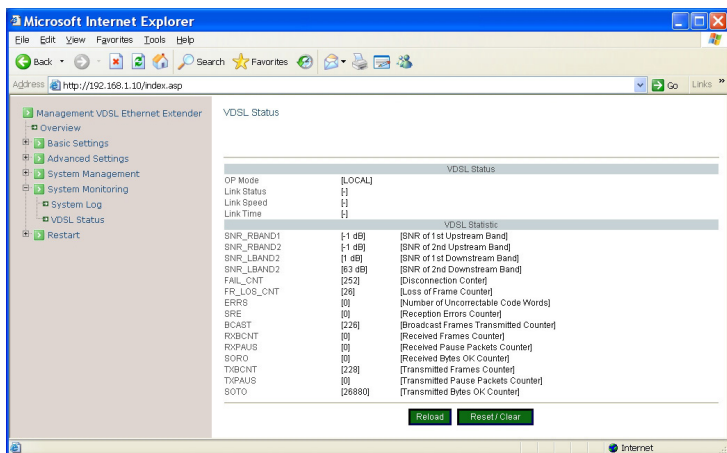
VDSL Status

1. Reload: Click the "Reload" button to reload the VDSL status of the Hardened Managed Ethernet Extender.
2. Reset / Clear: Click "Reset / Clear" button to reset and clean the VDSL status of the Hardened Managed Ethernet Extender.

Restart
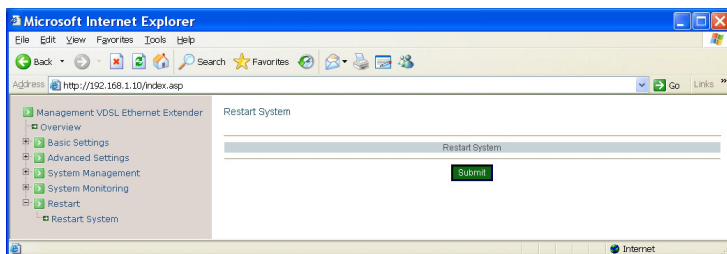
Restart System

1. Submit: Click "Submit" button to restart the Hardened Managed Ethernet Extender.

Command Line Console Management

The Hardened Managed Ethernet Extender provides a command line console interface for configuration purposes. The Hardened Managed Ethernet Extender can be configured either locally through its RS-232 port or remotely via a Telnet session. For the later, you must specify an IP address for the switch first.

This chapter describes how to configure the Hardened Managed Ethernet Extender using its console by Commend Line.

Connect the DB9 null-modem or cross over cable to the RS-232 serial port of the device to the RS-232 serial port of the terminal or computer running the terminal emulation application.

Direct access to the administration console is achieved by directly connecting a terminal or a PC equipped with a terminal-emulation program (such as HyperTerminal) to the Hardened Managed Ethernet Extender console port.

When using the management method, configure the terminal-emulation program to use the following parameters (you can change these settings after login):

[Default parameters]
115,200bps
8 data bits
No parity
1 stop bit

At the **login:** prompt just type in "root" and press <Enter>.

At the **Password:** prompt just press <Enter> to logon to the Hardened Managed Ethernet Extender.

The basic commands in the Command Line Interface (CLI) are listed in the following table.

System Management

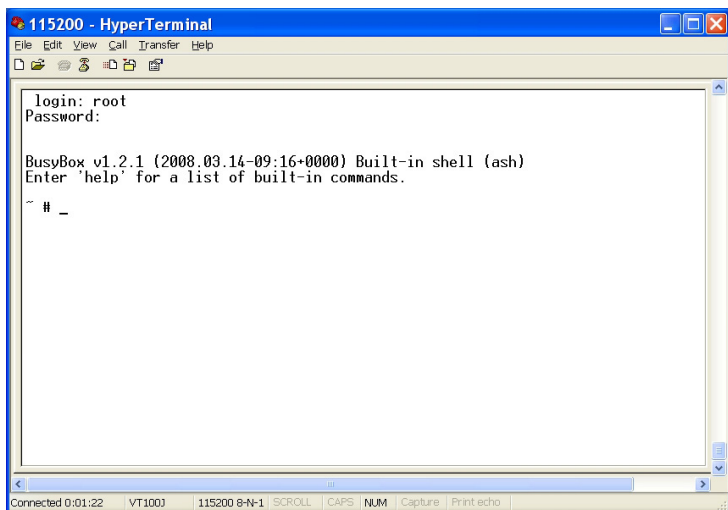| Command	Command Description
sys uptime	Display system uptime.
sys date	Display system date and time.
sys date –s **MMDDhhmmYYYY.ss** **MM**: Month **DD**: Day **hh**: Hour **mm**: minute	Set system date and time.
sys hostname	Display system name.
sys hostname **hostname**	Set system name.
sys snmp	Display SNMP settings.
sys snmp disp	Display SNMP settings.
sys snmp getcommunity	Display SNMP GetRequest community.
sys snmp getcommunity **CommunityName**	Set SNMP GetRequest community.
sys snmp setcommunity	Display SNMP SetRequest community.
sys snmp setcommunity **CommunityName**	Set SNMP SetRequest community.
sys snmp syslocation	Display location of the device.
sys snmp syslocation **location**	Set location of the device.
sys snmp syscontact	Display contact person for the device.
sys snmp syscontact **contact**	Set contact person for the device.
sys snmp sysdescr	Display description of the device.
sys snmp sysdescr **description**	Set description for the device.
sys snmp trapdest add **IP**	Add destination IP address of SNMP trap.
sys snmp trapdest delete **IP**	Delete destination IP address of SNMP trap.
sys passwd	Set new password.
sys actl on	Set access control ON to the device.
sys actl off	Set access control OFF to the device.
sys actl disp	Display access control settings.
sys actl add mac **MAC**	Add MAC address to accessible list.
sys actl add mac **IP**	Add IP address to accessible list.
sys actl del mac **index**	Remove index_th MAC address from accessible list.
sys actl del ip **index**	Remove index_th IP address from accessible list.
sys actl del mac all	Remove all MAC addresses from accessible list.
sys actl del ip all	Remove all IP addresses from accessible list.
sys actl enable mac **index**	Enable index_th MAC address from accessible list.
sys actl enable ip **index**	Enable index_th IP address from accessible list.
sys actl disable mac **index**	Disable index_th MAC address from accessible list.
sys actl disable ip **index**	Disable index_th IP address from accessible list.
sys reboot	Reboot system.
sys reset level1	Restore default password.
sys reset level2	Restore factory default.

sys reset level3	Restore factory default except network settings.
sys dhcp	Display DHCP settings.
sys dhcp on	Set the device to get IP address from DHCP server.
sys dhcp off	Set IP address to the device manually.
sys dhcp renew	Set the device to get new IP address from DHCP server.
sys ntp	Display NTP settings.
sys ntp on	Set NTP ON.
sys ntp off	Set NTP OFF.
sys ntp server **IP**	Set IP address of NTP time server to the device.
sys ntp zone **time_zone** **time_zone**: +12.0 ~ -12.0	Set NTP time zone to the device.
sys ping **IP**	Send ICMP ECHO_REQUEST to network hosts.
sys arp	Display ARP table.
sys log	Display log settings.
sys log on	Set log ON.
sys log off	Set log OFF.
sys log clear	Clear content of log.
sys log disp	Display log settings.
sys upgrade **filename**	Upgrade system with new firmware.
sys lfpt	Display Link Fault Pass Through settings.
sys lfpt on	Set Link Fault Pass Through ON.
sys lfpt off	Set Link Fault Pass Through OFF.

Ethernet Extender Management

Command	Command Description
vdsl status	Display link performance of Ethernet Extender port.
vdsl counter	Display statistic counter of Ethernet Extender port.
vdsl disp	Display settings of Ethernet Extender port.
vdsl reset chip	Reset chip of Ethernet Extender port.
vdsl reset counter	Reset counter of Ethernet Extender port.
vdsl au	Display auto upgrade settings of Ethernet Extender port.
vdsl au disp	Display auto upgrade settings of Ethernet Extender port.
vdsl au level **number** **number**: 0 ~ 9	Set auto upgrade level for Ethernet Extender port.
vdsl pinterval	Display polling interval of Ethernet Extender port.
vdsl pinterval **number** **number**: 2 ~ 256	Set polling interval for Ethernet Extender port.
vdsl retrain	Re-negotiate speed of Ethernet Extender port.

Network Management

Command	Command Description
net ifconfig	Display network configuration.
net ifconfig disp	Display network configuration.
net ifconfig ip **IP**	Set IP address to the device.
net ifconfig netmask **IP**	Set netmask address to the device.
net ifconfig up	Activate network interface.
net ifconfig down	Shutdown network interface.
net ping **IP**	Send ICMP ECHO_REQUEST to network hosts.
net netstat	Display network connections, routing table, interface statistics, masquerade connections, and multicast memberships.
net arp	Display ARP table.
net gateway	Display gateway settings.
net gateway disp	Display gateway settings.
net gateway add **IP**	Add gateway address to the device.
net gateway del **IP**	Remove gateway address from the device.
net dns	Display DNS settings.
net dns disp	Display DNS settings.
net dns add **IP**	Add DNS address to the device.
net dns del **IP**	Remove DNS address from the device.
net dhcp	Display DHCP settings.
net dhcp disp	Display DHCP settings.
net dhcp on	Set the device to get IP address from DHCP server.
net dhcp off	Set IP address to the device manually.
net dhcp renew	Set the device to get new IP address from DHCP server.
net an	Display auto negotiation settings.
net an disp	Display auto negotiation settings.
net an on	Set auto negotiation ON.
net an off	Set auto negotiation OFF.
net an speed **speed** **speed**: 10 or 100	Set LAN speed.
net an duplex **duplex** **duplex**: half or full	Set LAN duplex mode.
net an flowctl **flowcontrol** **flowcontrol**: on or off	Set flow control.
net disp	Display all settings.

Specifications

Applicable Standards	IEEE802.3 10Base-T, IEEE802.3u 100Base-TX, Ethernet over VDSL
Fixed Ports	1 x 10/100Mbps Ethernet port with RJ-45 connector 1 x Ethernet Extender port with RJ-11 and Terminal Block connectors
Speed 10Base-T 100Base-TX Ethernet Extender	10/20Mbps for half/full-duplex 100/200Mbps for half/full-duplex 1, 3, 5, 10, 15, 20, 25, 30, 40, 50Mbps
Switching Method	Store-and-Forward
Forwarding rate	14,880/148,810pps for 10/100Mbps
Cable 10Base-T 100Base-TX Ethernet Extender	2-pair UTP/STP Cat. 3, 4, 5 up to 100m 2-pair UTP/STP Cat. 5 up to 100m Telephone wires
LED Indicators	Per Unit (3 LEDs)- Power1, Power2, Power3
	Per Port- RJ-45 (2 LEDs): Link/ACT, FDX RJ-11, Terminal Block (9 LEDs): Remote, Local, Error, Link, 1, 2, 3, 4, 5
Dimensions	50mm (W) × 110mm (D) x 135mm (H) (1.97" (W) x 4.33" (D) x 5.31" (H))
Weight	0.8Kg (1.76lbs.)
Power	Terminal Block: 12-32VDC DC Jack: 12VDC, External AC/DC required
Operating Voltage & Max. Current Consumption	0.35A @ 12VDC, 0.175A @ 24VDC
Power Consumption	4.2W Max.
Operating Temperature	-40°C ~ 75°C (-40°F ~ 167°F) Tested for functional operation @ -40°C ~ 85°C (-40°F ~ 185°F) UL508 Industrial Control Equipment certified Operating Surrounding Air Temperature @ -34℃ to 60℃ (-29℉ to 140℉)
Storage Temperature	-40°C ~ 85°C (-40°F ~ 185°F)
Humidity	5 ~ 95%, non-condensing
Safety	UL508, EN60950-1, IEC60950-1
EMI	FCC Part 15, Class A EN61000-6-3: EN55022, EN61000-3-2, EN61000-3-3
EMS	EN61000-6-2: EN61000-4-2 (ESD Standard) EN61000-4-3 (Radiated RFI Standards) EN61000-4-4 (Burst Standards) EN61000-4-5 (Surge Standards) EN61000-4-6 (Induced RFI Standards) EN61000-4-8 (Magnetic Field Standards) EN61000-4-11 (Voltage Dips Standards)

Environmental Test Compliance	IEC60068-2-6 Fc (Vibration Resistance)
	IEC60068-2-27 Ea (Shock)
	IEC60068-2-32 Ed (Free Fall)
NEMA TS1/2 Environmental requirements for traffic control equipment	